

What is claimed is:

1. A radar apparatus comprising:

a transmitter section having an antenna
for radiating a transmit signal;

5 a receiver section having a plurality of
antennas for receiving said transmit signal reflected
from an object, a first selector switch section for
sequentially selecting output terminals of said plurality
of antennas one at a time for connection to an input
10 terminal, a first downconverting section for
downconverting, by using a portion of said transmit
signal, a received signal input from each of said
antennas to said input terminal via said first selector
switch section, a low-frequency cut-off filter connected
15 to an output of said first downconverting section, and a
second selector switch section for connecting an output
of said low-frequency cut-off filter to a sequentially
selected one of a plurality of A/D converters; and

a digital signal processing section for
20 receiving outputs of said plurality of A/D converters,
and for applying prescribed processing to said outputs to
detect distance to said object or relative velocity with
respect to said object, wherein

said first and second selector switch
25 sections both operate with the same switching period
(first period), and

an on-off control section is provided
which performs on-off control with a second period
shorter than said first period when the output terminal
30 of each of said plurality of antennas is connected to
said input terminal.

2. A radar apparatus as claimed in claim 1,
wherein said on-off control section is an amplifier
provided between said first selector switch section and
35 said first downconverting section, and said amplifier is
controlled on and off repetitively with said second
period shorter than said first period.

3. A radar apparatus as claimed in claim 1,
wherein said on-off control section is contained in said
first selector switch section, and said first selector
switch section performs on-off control with said second
5 period shorter than said first period when the output
terminal of each of said plurality of antennas is
connected to said input terminal.

4. A radar apparatus as claimed in claim 1,
wherein said first selector switch section is constructed
10 from amplifiers connected to the output terminals of said
plurality of antennas, and said output terminals of said
plurality of antennas are sequentially selected one at a
time for connection to said input terminal by controlling
said amplifiers on and off, and wherein, when the output
15 terminal of each of said plurality of antennas is
connected to said input terminal, said amplifier
connected to said antenna is controlled on and off
repetitively with said second period shorter than said
first period.

20 5. A radar apparatus as claimed in any one of
claims 1 to 4, wherein said A/D converters are sampled
periodically with a third period shorter than said second
period.

6. A radar apparatus as claimed in claim 1,
25 wherein an amplifier is provided between said first
selector switch section and said first downconverting
section, and a second downconverting section is provided
between said second selector switch section and said A/D
converters, and wherein said amplifier and said second
30 downconverting section are controlled on and off
repetitively with said second period.

7. A radar apparatus as claimed in claim 1,
wherein an amplifier is provided between said first
selector switch section and said first downconverting
35 section, and a second downconverting section and a third
downconverting section are provided between said second
selector switch section and said A/D converters, and

wherein said amplifier and said second downconverting section are controlled on and off repetitively with said second period, while said third downconverting section is controlled on and off repetitively with said first period.

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8. A radar apparatus as claimed in claim 1, wherein said plurality of antennas for receiving said transmit signal reflected from said object are transmit/receive antennas for radiating said transmit signal, and said plurality of transmit/receive antennas are provided with first connecting means for connecting to said transmitter section and said receiver section in turn and with second connecting means and third connecting means for connecting to said transmitter section and said receiver section, respectively, so that said transmit signal is radiated and said reflected signal received when each of said antennas is connected by said first connecting means, and wherein, when said each antenna is connected to said receiver section, said third connecting means turns on and off the connection with said receiver section.

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9. A radar apparatus as claimed in claim 1, wherein said first selector switch section has a configuration for selecting two adjacent antenna channels simultaneously and connecting said adjacent channels to said input terminal in alternating fashion, and wherein, when performing processing in said digital signal processing section, phase correction is applied based on a phase relationship obtained with each of said adjacent channels acting as a reference channel.